

What is claimed is:

1. A cylindrical roller bearing comprising:
an inner ring having a raceway on an outer
5 circumference thereof;
an outer ring having a raceway on an inner
circumference thereof;
a plurality of cylindrical rollers disposed to roll
freely between the raceway of the inner ring and the
10 raceway of the outer ring;
flange portions being disposed on both sides
respectively of the raceway of at least one of the inner
ring and the outer ring; and
a recess groove disposed at a corner portion where a
15 flange surface of at least one of the flange portions of
both sides and the raceway meet, the flange surfaces being
inclined at the same angle from a base end portion to a tip
end portion thereof, wherein
a radial dimension h_3 of chamfers formed on outer
20 circumferential edge portions of the cylindrical rollers is
set smaller than a radial height h_1 from the raceway near
the recess groove, curved portions being formed between the
chamfers and end surfaces of the cylindrical rollers.
2. The cylindrical roller bearing according to claim
25 1, wherein the curved portions are regulated to be a shape

wherein the following expressions are satisfied:

$$0.8 \leq h_2/h_1$$

$$1 \leq \tan^{-1} [\delta / (h_2 - h_3)] (^{\circ})$$

where h_1 is a radial height from the raceway near the
5 recess groove, h_2 is a radial dimension from the roller
surfaces of the cylindrical rollers to a boundary between
the curved portions and the end surfaces, h_3 is a radial
dimension of the chamfers of the cylindrical rollers, and
 δ is an axial dimension from a boundary between the
10 chamfers and the curved portions to the end surfaces of the
cylindrical rollers.

3. The cylindrical roller bearing according to claim
1, wherein the curved portions are formed by processing
wherein a flexible hone contacts in a slightly inclined
15 state with respect to the end surfaces of the cylindrical
rollers.

4. The cylindrical roller bearing according to claim
2, wherein the curved portions are formed by processing
wherein a flexible hone contacts in a slightly inclined
20 state with respect to the end surfaces of the cylindrical
rollers.

5. The cylindrical roller bearing according to any
one of claims 1 to 4, being incorporated in a main spindle
assembly of a machine tool.